DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

R00001RC
Bell
427
March 13, 2000

TYPE CERTIFICATE DATA SHEET NO. R00001RC

This data sheet which is part of type certificate No. R00001RC prescribes conditions and limitations under which the product for which type certificate was issued meets the airworthiness requirements of the Federal Aviation Regulations. This Type Certificate Data sheet No. R00001RC incorporates original issue for Model 427.

Type Certificate Holder

Bell Helicopter Textron
A Division of Textron Canada
12800 rue de l'Avenir
Mirabel, Quebec
J7J 1R4 Canada

I. Model 427 (Normal Category), Approved January 24, 2000.

Engine

2 Pratt and Whitney Canada PW207D

Fuel

ASTM-D-1655, Type Jet B, Jet A and Jet A-1; MIL-T-5624 Grade JP-4; MIL-T-5624 Grade JP-5 and MIL-T-83133 Grade JP-8.

See Rotorcraft Flight Manual for fuel mixture and fuel temperature limitations.

For all operations below 5 C (40F) ambient temperature, all fuel used must contain Phillips PFA-55MB or MIL-L-27686 anti-icing additive in concentrations of not less than 0.06% or more than 0.15% by volume.

Installed Engine Limits

	Torque Lb-ftn (%)	Turbine Temperature ^{o}C (^{o}F)	Gas Generator Speed % (RPM)
Twin Engine Operation			
Take-Off (5 Min)	481 (68.6)	900 (1652)	99.8 (57900)
Max. Continuous	481 (68.6)	850 (1562)	97.2 (56400)
One Engine Inoperative			
30 sec. OEI	569 (81.2)	990 (1814)	104.2 (60500)
2 min. OEI	569 (81.2)	950 (1742)	102.2 (59300)
30 min OEI	481 (68.7)	925 (1697)	101.2 (58700)
Continuous OEI	481 (68.7)	900 (1652)	99.8 (57900)

See Rotorcraft Flight Manual for transient limits
Output shaft speed limit is 104.5% (6271 RPM)

Rotor Limits

Power Off	Power On
Maximum 423 RPM 107%	Maximum 411 RPM 104%
Minimum 356 RPM 90%	Minimum 391 RPM 99%

Transmission Torque Limits

	Torque Limits %
Both Engines Operation	
Take-off	100
Maximum Continuous	100
One Engine Inoperative OEI	
30 Seconds OEI	81.2
2 minute OEI	75.6
Continuous OEI	57.5

Airspeed Limits	Basic V_{NE} (never exceed) is 140 KIAS. Decrease V_{NE} for ambient conditions in accordance with the Airspeed Limitations placard in the Rotorcraft Flight Manual. Autorotation V_{NE} 80 KIAS
C.G. Range	a) Longitudinal C.G. limits cm (in.) Forward limit 561.3 cm (221.0in) at 1724 kg (3800 lb.) changing linearly to 548.6 cm (216.0 in) at 2087 kg (4600 lb.), 548.6 cm (216.0 in) from 2087 kg (4600 lb.) up to 2495 kg (5500 lb.), changing linearly to 551.2 cm (217.0 in) at 2722 kg (6000 lb.). Aft Limit 576.6 cm (227.0 in) up to 2495 kg (5500 lb.) changing linearly to 574.0 cm (226.0 in) at 2722 kg (6000 lb.) b) Lateral C.G Limits Left 2.8 cm (1.1 in) at 1724 kg (3800 lb.), changing linearly up to 5.3 cm (2.1 in) at 1814 kg (4000 lb.), changing linearly to 3.8 cm (1.5 in) at 2722 kg (6000 lb.) Right 4.6 cm (1.8 in) at 1724 kg (3800 lb.) changing linearly up to7.1 cm (2.8 in) at 1814 kg (4000 lb.), changing linearly up to 4.8 cm (1.9 in) at 2722 kg (6000 lb.)
Empty Weight C.G. Range	See Maintenance Manual
Datum	Model 427 station 0 datum is 203.2 cm(80 in) forward of the nose of the helicopter.
Leveling Means	Plumb line from underside of the engine pan through the access panel in the baggage compartment roof to an index plate on the floor of the baggage compartment.
Maximum Weight (Mass)	2722 kg (6000 lb.)
Altitude limits	Maximum altitude at 2722 kg (6000 lb.) or less is 9000-ft density altitude.
Minimum crew	1 pilot (right seat)
Maximum occupants	8 (includes pilot)
Maximum Baggage	Maximum allowable baggage compartment weight is 250 pounds (113.4 kilograms) with a maximum deck and Cargo loading of 86 pounds per square foot (4.2 kilograms per 100 square centimeters). Maximum allowable cabin deck loading for cargo is 75 pounds per square foot (3.7 kilograms per 100 square centimeters).
Fuel capacity	770 litres (203 US Gal.) usable, 10.0 litres (2.65 US Gal.) unusable.
Oil capacity	Each Engine 5.12 litres (4.5 Imp. Quarts) (5.5 US quarts); Usable oil 1.07 litres (1 Imp. Quart) (1.13 US Quarts) included in capacity Undrainable oil 1.6 lbs.
Rotor blade and Control movement	For rigging information refer to the 427 Maintenance Manual
Serial numbers eligible	56001 and subsequent. Serial numbers 58001 and subsequent are not eligible for FAA Certificate of Airworthiness.

Import Requirements

To be considered eligible for operation in the United States, each Aircraft manufactured under this Type Certificate must have a U. S. Airworthiness Certificate that may be issued on the basis of the Canadian Department of Transport Certificate of Airworthiness for Export signed by the Minister of Transport containing the following statement:

"The rotorcraft covered by this certificate has been examined, tested, and found to comply with the type design approved under Type Certificate R00001RC and to be in condition for safe operation."

The approved type design for the model 427, consists of data listed on Bell Helicopter Textron top drawing 427-100-001, Revision CY, or later approved revision and the incorporation of Bell kit 427-706-012 (Particle Separator kit), 427-706-018 (Fuel Shutoff Valve kit) and 427-706-019 (Engine Accessory Bay Overheat Detector kit).

The U.S. airworthiness certification basis for aircraft type certificated under FAR Section 21.29 and exported by the country of manufacture is FAR Section 21.183(c) or 21.185(c).

Prior to issuance of a U.S. Airworthiness Certificate, the BHT-427 Maintenance Manual's list of effective pages must indicate FAA acceptance of the Instructions for Continued Airworthiness.

Certification Basis

a) FAR part 27, dated February 1, 1995, amendment 27-1 through 27-31

b) FAR part 36 Amendment 36-1 through 36-20

c) The following paragraphs for FAR part 29 at amendment 29-1 through 29-40 as identified in FAR 27 Appendix C for engine isolation:

29.861(a)	29.901(c)	29.903(c)&(e)
29.908(a)	29.917(b)&(c)(1)	29.927(c)(1)
29.953(a)	29.1027(a)	29.1045(b)(c)(d)&(f)
29.1189(c)	29.1193(e)	29.1195(a)&(d)
29.1197	29.1199	29.1201
29.1305(a)(6)&(b)		

Equivalent Safety Findings made in accordance with FAA part 21.21(b)(1) are as follows:
29.903(b), 29.1181(a), 29.1191(a)(1) – Firewalls and Designated Fire Zones

d) Additional Equivalent Safety Findings made in accordance with FAA part 21.21(b)(1) are as follows:
27.307(b)(5), 27.723, 27.725, 27.727 – Skid Type Undercarriages
27.963(g) – Fuel Tanks
27.995 – Fuel Valves
27.1191 – Firewalls
27.175(c) - Static Longitudinal Stability in Autorotation

e) Special Condition made in accordance with FAR part 21.16 is as follows:
27-00S-SC High Intensity Radiated Fields (HIRF), dated May 11, 1999

Production Basis

None. See import requirements.

Equipment

The basic required equipment as prescribed in the applicable airworthiness regulations (see certification basis) must be installed in the helicopter for certification.

NOTE 1

Current weight and balance report including list of required equipment and list of equipment included in certificated empty weight, and loading instructions when necessary must be provided for each helicopter at the time of original certification. The certificated empty weight and corresponding C.G. locations must include undrainable oil and unusable fuel for the appropriate model.

NOTE 2 The following placard must be displayed in front of and in clear view of the pilot: "THIS HELICOPTER MUST BE OPERATED IN COMPLIANCE WITH THE OPERATING LIMITATIONS SPECIFIED IN THE APPROVED FLIGHT MANUAL."

All placards listed in the approved flight manual must be installed in the specified locations.

NOTE 3 The service lives of components are listed in the BHT-427 Maintenance Manual, Chapter 4. This aircraft shall be maintained in accordance with the BHT-427 Maintenance Manual.

NOTE 4 Modifications within the compartment, between the main transmission and the engine accessory section, may compromise the mitigating design features approved by an Equivalent Safety Finding to FAR part 27.1191. The FAA Rotorcraft Directorate must approve all design changes in this area.

NOTE 5 The model 427 rotorcraft employs electronic engine controls that are recognized to be more susceptible to Electromagnetic Interference (EMI) than manual (non-electronic) controls used on other rotorcraft. EMI may be the result of radiated or conducted interference. For this reason, modifications that add or change systems that have the potential for EMI, must either be qualified to an FAA acceptable standard or tested at the time of installation for interference to the engine controls. This type of testing must employ the particular engine control's diagnostic techniques and external diagnostics techniques. This test must be accomplished in accordance with FAA approved Bell Report No. 427-099-053, or an equivalent FAA approved alternate test plan.

NOTE 6 Any alteration to the type design of the model 427 requires instructions for continued airworthiness. These instructions must be submitted and accepted by the Fort Worth Aircraft Evaluation Group prior to approval for return to service.

NOTE 7 The model 427, incorporates an emergency OEI limit override function. When this feature is selected, damage to the engine and transmission is experienced and continued flight is not permitted. Use of this emergency power invalidates the airworthiness of the aircraft and maintenance in accordance with the model 427 Maintenance Manual is required to return the aircraft to an airworthy condition.

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